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Approach to Performance Measurement

CDC and partners are concerned with a spectrum of health issues, including infectious diseases, chronic conditions, adverse reproductive outcomes, environmentally related conditions, occupationally related health events, and injuries. This array of health conditions and outcomes requires a variety of intervention strategies for populations, in addition to clinical preventive services for individuals. CDC engages in extensive dialogue with partners, communities, and the public to identify and implement intervention strategies that address the specific needs of diverse populations. Examples include the provision of prophylactic measures (e.g., vaccination, post-exposure prophylaxis), educational services (e.g., dissemination of public health messages, counseling), inspection of food establishments, and control of disease outbreaks. For these activities, the rational development of public health policy depends on public health information.

A variety of CDC data systems provide the science base for identifying health problems, designing interventions, and monitoring program performance (See Appendix D). These data systems face considerable challenges in addressing each of these three areas. For the most part, data systems that were designed to support scientific objectives are now becoming important for the monitoring of performance. Challenges in obtaining data to monitor performance under GPRA include the following:

1. As GPRA measures are refined over time, data systems to produce data with a frequency that corresponds to the periods during which performance is measured.
2. As health system changes, historical data series may not continue to produce needed data. For example, the move toward managed care may make medical information increasingly proprietary and impede access to data for research and statistical purposes. Similarly, changes in relationships among healthcare providers and laboratories may make public health surveillance based on case reports more difficult. At the same time, these changes present opportunities for new data-system partnerships.
3. Data systems will need to produce information of sufficient quality and precision to detect relatively small changes in performance indicators. This may require investments in larger sample sizes for surveys and new technologies for improving data quality. Continuing research will be required to establish the data systems and underlying evaluation approaches to assess causes (program interventions) and effects (outcomes) for performance monitoring.
4. Many national data systems are the source of GPRA measures for CDC and other health programs. These systems must be assessed and upgraded to remain current with the public health infrastructure. Resources to ensure the maintenance and strengthening of these data systems are included in the FY 2002 CDC budget request and need to be continued.
5. Because many CDC and DHHS programs are implemented at state and local levels, it will be increasingly important to obtain reliable, systematic data at these levels for monitoring of program implementation, performance, and outcomes.

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Ascertaining what information is needed and how to collect it is a complex issue. Information for action must be useful to public health programs at local, state, and national levels. CDC and partners use at least seven categories of information to understand and address disease, injury, and disability using the public health model. These categories of information include:

- Reports of health events affecting individuals;
- Vital statistics on the entire population;
- Information on the health status, risk behaviors, and experiences of populations;
- Information on potential exposures to environmental agents;
- Information on public health programs;
- Information useful to public health but obtained by organizations not directly involved in public health practice; and
- Information on the healthcare system and its impact on health.

Reports of health events: Reports of cases of diseases of public health importance form the basis for many CDC programs. The National Notifiable Disease Surveillance System (NNDSS) seeks reports on all cases of >40 conditions in the United States. To minimize the burden placed on those who report the data, CDC limits the amount of information collected for each case. NNDSS data are used to monitor disease trends, evaluate public health programs, and identify unusual occurrences of conditions that may require further epidemiologic investigation at the local level.

For some public health purposes, effective action requires additional details on each case. Supplemental data collection systems have therefore been developed for some of the diseases reported to NNDSS. These systems may be less comprehensive in terms of populations represented but provide more detailed information on characteristics of the occurrence of disease. For example, cases of hepatitis are reported weekly to NNDSS for publication in the *Morbidity and Mortality Weekly Report (MMWR)*. In addition, the Viral Hepatitis Surveillance Project collects data on risk factors for different types of viral hepatitis in selected geographic areas. These data have been used to document the importance of behaviors associated with sexual activity and drug use as risk factors for transmitting hepatitis B virus and to target education and vaccination programs.

Control of some conditions requires more detailed information than can be obtained feasibly from a large group of clinicians or institutions. Networks of selected healthcare providers have therefore been organized to meet these targeted information needs. For example, CDC's Sentinel Event Notification System for Occupational Risks (SENSOR) targets groups of healthcare providers as a component of a comprehensive approach for obtaining data on which to base efforts to prevent workplace-related morbidity. The National Nosocomial Infections Surveillance System (NNIS) receives reports from a selected group of hospitals on the incidence and characteristics of hospital-acquired infections. Data from this system have been instrumental in alerting health authorities to the emergence of antibiotic-resistant strains of bacteria, which in turn has led to the development of recommendations for the appropriate use of antibiotics.

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Vital statistics: Vital records (e.g., births, deaths) are the primary source of some of the most fundamental public health information. Data on teen births, access to prenatal care, maternal risk factors, infant mortality, causes of death, and life expectancy are among the staples of public health information provided by vital statistics. Vital statistics are often the most complete and continuous information available to public health officials at the national, state, and local levels; the timely availability of these data is critically important.

In the United States, the legal authority for vital registration rests with the states and territories. CDC's National Center for Health Statistics (NCHS) produces national vital statistics by collecting data from the vital records of the states. NCHS works with the states to ensure a uniform national data base through the promotion of standard data collection forms and data preparation and processing procedures and also provides partial financial support for state systems.

Health status, risk factors, and experiences of populations: Since the determinants of many health problems are behavioral, environmental, or genetic, health agencies need information that is not readily available from medical records on the prevalence of various types of behavior and on access to care. Thus, regularly conducted surveys of the general population are needed for public health. These surveys range from large-scale assessments of the general population to assessments targeted at high-risk (i.e., particularly vulnerable) populations. This need is particularly acute at the state and local levels. Surveys provide information on: 1) baseline health status, 2) morbidity, 3) prevalence of behavioral risk factors, 4) use of healthcare services and identification of underserved populations, and 5) potential for exposure to toxic agents. Information generated from the surveys is used in developing prevention and control programs and in ensuring adequate delivery of health services.

Potential exposure to environmental agents: Information on exposures to environmental agents can be used in evaluating the risks to health from noninfectious diseases, injuries, and certain infectious diseases. For example, measurement of airborne particulates is useful in assessing risks related to pulmonary disorders such as asthma and lung cancer. Information on vectors that may carry agents of infectious disease is important in evaluating the risk for acquiring such infections.

Program information: Data needed to operate public health programs include the number of clients served and the costs of services rendered. These data are useful to public health officials in assessing the effectiveness of public health programs, comparing programs, documenting the need for continuing a particular program, and maintaining accountability for tax dollars spent.

Information from other organizations: Data useful for public health are currently or potentially available from organizations whose functions may not be related to those of CDC and state and local health departments. Data from the Bureau of the Census, for example, are needed for both the reliable computation of rates and the proper adjustment of rates for comparison over time or in different geographic areas. The Environmental Protection Agency (EPA) compiles environmental air-monitoring data to assess compliance with standards for air pollutants established by the Clean Air Act. Data collected through this system are used by public health officials for hazard alerts when pollutants exceed federal standards and in studies of the effects of air pollutants on morbidity associated with respiratory diseases. The Occupational Safety and Health Administration (OSHA) and the Bureau of Labor Statistics compile data on the occurrence

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of work-related injuries and illnesses and exposure to hazards in the workplace, which can be used for surveillance and research. The Department of Transportation operates the Fatal Accident Reporting System, used in public health to assess risk factors for motor-vehicle-related injuries and deaths. Crime statistics gathered by the Federal Bureau of Investigation (FBI) assist in evaluating the public health impact of intentional injuries, and the Consumer Product Safety Commission collects data on injuries related to consumer products.

Information on the healthcare system: Information is also needed on the healthcare system and the health impact resulting from changes in the system. CDC provides a great deal of information to monitor the capacity of the healthcare system, utilization of the system, and access to health insurance and services by the American people. These data include: inventories of healthcare providers; patterns of utilization of health services such as hospitalization rates and uptake of new technologies; and access to health care and barriers (both financial and non-financial) to access.

Linkages with Budget, Cost Accounting, Information Technology Planning, Capital Planning, and Program Evaluation

Clinger-Cohen Act

CDC has implemented the requirements under the Clinger-Cohen Act of 1996 (CCA) for information technology (IT) capital investment planning, monitoring, and performance measurement. The Information Technology Investment Review Board (ITIRB) process has been established and was released CDC-wide on January 5, 1999, via the CDC Intranet. CCA compliance became a component of the CDC budget planning process for the FY 2001 budget. Major IT investments associated with budget initiatives required the development of a Capital Asset Plan and Business Case (Exhibit 300) as part of the submission.

Also in compliance with CCA, CDC has developed several components of the agency's information technology architecture, such as certain health data standards, networking and telecommunications architecture, information security, and the majority of the agency's administrative procedures. More extensive work on other core business processes, information flows, process and data models is ongoing.

In addition to efforts in the implementation of CCA, CDC has a well-integrated GPRA and IRM Strategic Plan that aligns IT products and services with CDC's ever-changing mission needs and directions. The IRM strategic goals, strategies and performance measures support the mission, mission goals, and CDC's GPRA performance plan.

Linkages with the President's Management Agenda

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CDC has been actively pursuing goals and improvements related to the President's Management Agenda (PMA) for some time. For example, from 1997 to 2001, CDC decreased its proportion of administrative positions by 6 percent. CDC has historically focused on keeping the agency market-based and efficient by having over 3,000 service contractor staff engaged to conduct commercially-oriented responsibilities. In addition, in 2000, CDC established its Fiscal Management Excellence Initiative, which has further enhanced its efforts to improve fiscal performance. In FY 2002, CDC had a less than one percent variance between allotted agency FTE levels and actual FTE usage, thus, effectively integrating strategic workforce planning with budget and program execution. CDC is also organized to effectively address and lead PMA issues in several ways. For example, CDC has established an Executive Steering Committee to help concentrate management attention on the PMA, and has appointed a full-time, executive leader to coordinate activities and articulate the interdependence among the initiatives.

CDC has received its FY 2002 PMA, "Progress", Scorecard results. HHS provided CDC three "Green" lights and two "Yellow" lights. The "Green" lights included the Competitive Sourcing, Improved Financial Management, and Expanded E-Government Initiatives. The "Yellow" lights included Strategic Management of Human Capital and Enhanced Budget and Performance Integration Initiatives. These scores reflect the continuing leadership and hard work that CDC management and staff are focusing on the PMA.

Strategic Management of Human Capital

Strategic Management of Human Capital is a priority for CDC. The agency received a "Yellow" Scorecard on this Initiative, indicating achievement of some, but not all, goals. CDC has established a number of specific and measurable goals to address Strategic Management of Human Capital issues. For example, by 2004, CDC's supervisory ratio will increase to 1:9. Between July 2001 and January 2003, CDC's supervisory ratio increased by 57 percent, as an indication of the continuing success in flattening and delayering the agency. Another PMA Human Capital goal is to increase the span of control/organizational size to 12 FTE's in each Branch by 2004. CDC's Human Resources Management Office (HRMO) continues to work with each CIO to help assure that Human Capital goals are met.

CDC is continuing to work to further address Workforce Restructuring issues. For example, as of January 2003, CDC had already abolished 85 percent of the 125 administrative and management positions required to be abolished by September 2003. In addition, CDC continues to search for ways to further delayer the agency. As part of this effort, CDC has recently abolished a net of about 40 organizational units.

Increased Competitive Sourcing

CDC received a "Green" Scorecard result from HHS, documenting that all goals for the period had been achieved. CDC has developed competitive sourcing plans for FY 2002, 2003, and 2004, and is carrying out these plans. The plans set forth the strategy to conduct studies or directly convert 5 percent of the agency's commercial-type positions in FY 2002, 10 percent in 2003, and 10 percent in 2004. CDC fully achieved the FY 2002 goal. In 2003, CDC is conducting public-private competitions and/or direct conversions for not less than the additional 10 percent of the CDC FTEs listed in its FAIR Act Inventory as performing commercial work. CDC has also delivered its FAIR Act Inventory on time and in full conformance with HHS' guidance. Finally, CDC has acquired outside contractor support to provide assistance for these continuing competitions.

Improved Financial Management

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CDC received a “Green” Scorecard result from HHS on this Initiative, documenting that CDC continues to make great strides in this area. For the past five years, CDC has received an unqualified opinion on the financial statements performed by independent auditors. A new HHS-wide financial management system, the Unified Financial Management System (UFMS), will be implemented to replace five legacy accounting systems currently used across CDC. The current accounting system is based on software that is 16 years old and requires substantial, labor-intensive effort. CDC and HHS kicked off the implementation of the CDC segment of the UFMS development in October 2002. CDC also employs a comprehensive method to allocate indirect costs that fund internal operations. This method, developed with the assistance of Ernst and Young, LLP, correlates work performed and centrally mandated services, thus, directly linking users of services with the actual cost of performing these services. CDC also has been graduating staff from its Financial Management Certificate Program and currently has over 200 staff enrolled. CDC has continued its success in minimizing erroneous payments. In FY 2002, the agency issued 99.96 percent accurate payments. In addition, CDC leads in the area of prompt payment with a 97 percent compliance rate.

Expanded E-Government

CDC continues to be a leader in E-Government initiatives, as reflected by the “Green” Scorecard provided by HHS. Some CDC leadership efforts include:

- Actively engaging in seven government-wide E-Gov initiatives, such as e-Vitals, consolidated health informatics (CHI), e-Travel, e-Grants, and Geospacial Information One Stop, with an initial 16 CDC programs, representing \$4.4 billion.
- Contributing to HHS initiatives, such as leading the HHS large agency IT infrastructure consolidation initiative, serving as Program Manager for the Security Team, and engaging in the HHS Enterprise IT Strategic Plan, UFMS, Enterprise Human Resources and Payroll, and HHS enterprise information security.
- Progressing towards compliance with the Government Paperwork Elimination Act (GPEA) by the October 2003 deadline by making data collections and disseminations enabled electronically.
- On-going enhancement of the CDC web presence as the authoritative and trusted source of public health information for healthcare providers, public health officials, the media, and the public. Over 5 million different visitors per month make CDC’s website one of the most frequently visited government websites. The events of 9/11 and the anthrax infections drew over 9 million visitors to the CDC website in October 2001 alone.

Enhanced Budget and Performance Integration

CDC continues to work diligently on improving budget and performance integration. This work has spanned the organization, and has included staff from planning and budget offices, the procurement and grants office, and virtually every program across CDC. Accomplishments this year include:

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Annual Plan/Report Submission

CDC's annual performance plan and report was substantially revised in the spring and early summer. Submitted on June 7, the plan complied with the Department's Detailed Instructions. Significant changes and improvements to the plan included:

- Inclusion of an executive summary that reinforces the link between the performance plan and the budget request while highlighting past, present, and future performance;
- Creation of a "performance road map" that clearly shows the relationship between CDC major budget activities and performance goals undergirding them;
- Provision of a more meaningful referencing system wherein performance measures are related to the budget request, Healthy People 2010, HHS Strategic Plan Goals, and the President's Management Agenda; and
- Improvement in the quality and comprehensiveness of appendices. These improvements included a more coherent discussion of our partnership and coordination activities, as well as enhancements to our data verification and validation section of the plan.

Program Outcomes

CDC's Fiscal Year 2003 Performance Plan contained 228 performance measures, 57 (25%) of which were outcome measures. We made significant strides in reducing our over-all number of measures while increasing outcomes. Our FY 2004 plan submitted to HHS in June contained 188 performance measures, 61 (32%) of which were outcome measures. This submission reflects yet a further refinement of measures, containing only 100 measures, 39 (39%) of which are outcome measures.

Program Effectiveness

OMB identified five CDC programs for the Program Assessments. These programs included immunization, breast and cervical cancer, diabetes, domestic HIV/AIDS, and Health Alert Network. However, prior to OMB's identification of the programs, CDC formed a cross-agency working group to discuss ways in which to effectively capture program performance data. This working group served as a springboard for the five programs who were ultimately selected to participate in the assessment activities, and OMB's assessment tool (the PART) contained many of the components that the working group had previously discussed.

Thorough reviews of the five programs were carried out at CDC. Smaller, program-specific working groups were formed to develop responses to the PARTs. Consistency across the workgroups was provided by staff in CDC's Office of Program Planning and Evaluation. In addition, the Financial Management Office and Procurement and Grants Office provided critical input into questions that involved financial and procurement policies and procedures.

In June 2002, the five assessment tools and supporting documentation were sent to HHS on time and with complete responses. In the months that followed, HHS and CDC conducted conference calls with OMB to discuss the assessment tools, and CDC provided an array of information requested of us by OMB to help inform their assessments of our five programs. Each of the five programs has successfully completed the assessment process and received its final rating in December 2002. We are currently working on improvements identified as a result of the PART process.

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Public Health Grant Initiative (OMB Management Agreement)

One of the key components of the OMB/DHHS management agreement involved creation of a pilot program at CDC to streamline several grants programs. Asthma, diabetes, and obesity grant programs were selected as the candidate programs. Multiple offices and programs across CDC worked on this cross-cutting activity with DHHS. CDC offices included: planning offices in the Office of the Director, the National Center for Chronic Disease Prevention and Health Promotion, and the National Center for Environmental Health, as well as the CDC Procurement and Grants Office. Programs involved included two in the National Center for Chronic Disease Prevention and Health Promotion (diabetes and obesity), and the asthma program in the National Center for Environmental Health.

This project is on-going; a brief time line and list of deliverables depicting the process are provided below:

- 3/25/02: Initial Envision meeting between DHHS and CDC to describe the project.
- 4/3/02: Project time line developed.
- 4/19/02: CDC submits initial information to DHHS. This information includes (by program): program descriptions, list of administrative burdens, logic models, and program outcomes.
- 4/30/02: DHHS meets with OMB.
- 5/1/02: Conference call between DHHS and CDC to debrief on OMB meeting.
- 5/22/02: CDC receives Excel spreadsheet from DHHS containing recommended items to be addressed by each program.
- 6/11/02: CDC submits completed spreadsheets to DHHS.
- 8/15/02: CDC internal workgroup reconvenes to discuss next steps.
- 8/29/02: Teleconference between OMB, DHHS, and OMB held.
- 9/9/02: CDC submits revised pilot project proposal to DHHS.

Over the course of this project, CDC has provided a variety of information including:

1. A list of administrative burdens associated with each grant program;
2. Draft outcome measures for each of the grant programs;
3. Reduction in the over-all number of grant announcements within each programmatic area;
4. Streamlined processes for the application review process;
5. Streamlined progress reporting processes; and
6. Projections of savings in cost, burden hours, and progress reporting for CDC and the states once proposed streamlined processes are implemented.

Based upon OMB's response to the materials submitted in June, CDC staff who worked on this project reconvened in August, 2002. OMB's comments were reviewed and the team identified key issues regarding this project. A revised proposal was developed, vetted through HHS policy and procurement offices, and submitted to OMB on September 26, 2002.